

What is claimed is:

1. An inertization method for reducing a risk of fire in an enclosed protected area, comprising:

feeding an oxygen-displacing gas from a primary source;

maintaining an oxygen content in the protected area for a defined period at a control concentration (RK) below an operating concentration (BK) based upon said feeding step; and

maintaining the control concentration (RK) by means of a secondary source for an emergency operating period in an event of a failure of the primary source, when at least one of the operating concentration (BK) is equal to or substantially equal to a design concentration (AK) defined for the protected area, and the control concentration (RK) and the operating concentration (BK), forming a failure safety margin (ASA), are lowered so far below the design concentration (AK) defined for the protected area that the growth curve of the oxygen content reaches a limit concentration (GK) defined for the protected area only in a predefined time.

2. The inertization method according to claim 1, wherein the failure safety margin (ASA) is determined by taking at least one of an air change rate applicable for the protected area, particularly an  $n_{50}$  value for the protected area, and the pressure differential between the protected area and the surrounding area into consideration.

3. The inertization method according to claim 1, wherein the design concentration (AK) is lowered by a safety margin (S) to below the limit concentration (GK) defined for the protected area.

4. The inertization method according to claim 1, further comprising:  
detecting a fire parameter using a detector;  
wherein the oxygen content in the protected area is lowered quickly to the control concentration upon detecting an incipient fire or a fire when the oxygen content was previously at a higher level.

5. The inertization method according to claim 1, wherein the control range is about  $\pm 0.2\%$  by volume oxygen content around the control concentration (RK).

6. The inertization method according to claim 1, wherein the oxygen content in the protected area is controlled while taking at least one of the air change rate, particularly the  $n_{50}$  value of the protected area, and the pressure differential between the protected area and the surrounding area into consideration.

7. The inertization method according to claim 1, wherein the extinguishing agent for maintaining the control concentration (RK) in the protected area is calculated while taking the air change rate of the target area, particularly the  $n_{50}$  value of the

protected area, and/or the pressure differential between the target area and the surrounding area into consideration.

8. The inertization method according to claim 2, wherein the design concentration (AK) is lowered by a safety margin (S) to below the limit concentration (GK) defined for the protected area.

9. A device for implementing an inertization method for reducing a risk of fire in an enclosed protected area, comprising:

a primary source machine that produces oxygen-displacing gas;

a cylinder array; and

one of a buffer volume and a deoxydation machine;

wherein an oxygen content is maintained in the protected area for a defined period at a control concentration (RK) below an operating concentration (BK) based upon said feeding step;

wherein the control concentration (RK) is maintained by means of a secondary source for an emergency operating period in an event of a failure of the primary source, when at least one of the operating concentration (BK) is equal to or substantially equal to a design concentration (AK) defined for the protected area, and the control concentration (RK) and the operating concentration (BK), forming a failure safety margin (ASA), are lowered so far below the design concentration (AK) defined for the protected area that the growth curve of the oxygen content reaches a limit concentration (GK) defined for the protected area only in a predefined time.